

QUANTA

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Oct/Nov 2006

Information on the Association

Membership of QUANTA, the independent QL user group, is by annual subscription. The Membership Secretary can supply full details. Copies of the association's constitution & annual accounts are available from the Secretary. There is an extensive software library. There are active national subgroups. Details are given in the Member's Guide and in this magazine.

QUANTA Committee - 2006/2007

Chairman	John Mason	73 Chewton Common Road, Highcliffe, Christchurch, BH23 5LZ
	Email: chairman@quanta.org.uk	Tel: 01425 275894
Secretary	Sarah Gilpin	181 Urmston Lane, Stretford, Manchester. M32 9EH
	Email: secretary@quanta.org.uk	Tel: 0161 865 2872
Treasurer , Membership Secretary & Missed Issues	John Gilpin	181 Urmston Lane, Stretford, Manchester. M32 9EH
	Email: treasurer@quanta.org.uk	Tel: 0161 865 2872
	Email: membership@quanta.org.uk	
Magazine Editor		
	Email: editor@quanta.org.uk	
Librarian	Roy Brereton	94 Teignmouth Road, Clevedon, N. Somerset. BS21 6DR
	Email: librarian@quanta.org.uk	Tel: 01275 871 917
Helpline		
	Email: helpline@quanta.org.uk	
Back Issues Requests	Basil Lee	31 Fairdale Gardens, London. SW15 6JW
	Email: backissues@quanta.org.uk	Tel: 0208 789 1976

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Firstly I am very sorry to have to report that due to loss of their meeting place the East Anglian QL User Group has had to close down. My commiserations to Tarquin and all members of the group. Thank you for keeping on QLing.

In this issue you will find more programming by Stephen Poole – thank you Stephen. Unfortunately, due to lack of space in this issue, we have had to leave out the concluding part of the “Genealogy and the QL” series by Sarah Gilpin, the assembly code for George Gwilt’s article “Config Blocks in Turbo” and the first part of “GPS (Global Positioning Systems) on the QL” by Hugh Rooms which stems from a presentation given by Hugh at the last Hove Workshop. These articles will appear in the next issue.

Those of you who attended the AGM in Manchester this year may remember a number of Robots on display. The owner of those robots, David Buckley, has kindly sent us the first in a series of articles on “Robotics on the QL”

2007 is not that far away and once more it is time to think about getting ready for the next Annual General Meeting. In this issue you will see Notice 1 inviting bids to hold the AGM 2007 (to be returned to the Secretary by 30th November 2006), and calling for nominations for the 2007/2008 Committee. We are also asking you to bring to Committee’s

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attention, matters which it might be appropriate for the AGM to consider. (Your response to the nominations and the topics for discussion need to reach the Secretary before 1st February 2007.)

Finally on behalf of the Committee and myself may I wish you a Joyous Christmas 2006 and a Happy New Year in 2007.

Annual General Meeting 2007

Notice No. 1

QUANTA invites bids to hold the

Annual General Meeting 2007

Either on the weekend of April 14th/15th 2007

Or

On the weekend of April 28th/29th 2007

at a Venue in the Midlands or southern half of UK

Any Sub Group/Member wishing to host the AGM should notify the Secretary on or before 30th November 2006

secretary@quanta.org.uk

Sarah Gilpin, Secretary

GAMES TO PASS THE TIME

Once again Stephen Poole has given us a means of passing away those holiday hours in the coming festive season. Not only does he provide us with another two absorbing games complete with listings of SuperBASIC code, he also sets down his usual challenge to expand or improve his code and at this time of year QUANTA are offering a prize of £25 for the best solution submitted to our **Christmas Challenge**. [See Page 9 for details. Ed]

Stephen will be asked to judge your entries and the prize will go to whoever submits the fullest solution using the minimum code, points also being awarded to those who use the most imaginative methods in their code [Ed]

This time a very simple program: You have to estimate the distance from the ball to the hole in one-character-wide steps.

Positive force moves forwards, Negative force moves back. 'Q' or 'q' quits the game! Here's a clue: The full screen can have a width of 85 characters, AT positions 0 to 84. You are not permitted to go off the green! Practise will develop your powers of judgement.

When you have potted the ball, you move on to the next fairway, and at the end, get your final score.

Budding programmers could try including bias to simulate a cross-wind... or plotting the trajectory precisely using the laws of physics. (Quite simple really unless you include obstacles). Another easy project would be to have two or more Golfers playing alternately.

Whatever you do, keep improving your programming skills.

```
100 ::
110 REMark GOLF_bas. by S.Poole, v5sept2006
120 REMark for Quanta
130 OPEN#1,con_128: WINDOW 512,256,0,0: CLS: SCALE 100,0,0
140 shots=0: Dn=17: wide=84: y=30.25: ps=2
150 RANDOMISE DATE: CSIZE 0,0: n$='-+0123456789'
160 :
170 FOR holes=1 TO 18
180   ac=0: hole=RND(2 TO wide): Pr 7,Dn,ac,'o': shot=1
190   :
200   REPEAT loop
210     grass: AT 5,1: CLS 3: INK 7
220     PRINT; 'hole' ! holes , 'shot' !shot, ! 'force';
230     INPUT !d$: IF d$="": NEXT loop
240     IF d$ INSTR'Qq': STOP
250     :
260     FOR f=1 TO LEN(d$)
270       IF d$(f) INSTR n$: ELSE NEXT loop
280     END FOR f: dist=d$
290     IF ac+dist>wide OR ac+dist<0: NEXT loop
300     :
310     IF dist=0 THEN
320       NEXT loop: ELSE direction=(dist>0)-(dist<0)
```

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```
330 END IF : UNDER 1: Pr 4,Dn,ac,' ': UNDER 0
340 :
350 FOR movit=direction TO dist STEP direction
360 ac=ac+direction: i$=INKEY$(#1,ps)
370 Pr 7,Dn,ac,'o' : i$=INKEY$(#1,ps)
380 Pr 7,Dn,ac,' ' : grass
390 END FOR movit
400 Pr 7,Dn,ac,'o': grass: i$=INKEY$(#1,ps)
410 :
420 IF ac=hole THEN
430 BEEP 12345,0: Pr 7,Dn,hole,'!'
440 i$=INKEY$(#1,250): grass: EXIT loop
450 END IF : shot=shot+1
460 END REPeat loop: shots=shots+shot
470 END FOR holes: INK 7: AT 20,1
480 PRINT '18 holes in' ! shots ! 'shots'
490 i$=INKEY$(#1,500): GO TO 100
500 :
510 DEFine PROCedure grass
520 INK 4: LINE 0,y TO 150,y: Pr 0,Dn,hole,' '
530 END DEFine
540 :
550 DEFine PROCedure Pr(ik,p1,p2,p$)
560 INK ik: AT p1,p2: PRINT p$
570 END DEFine
580 ::
```

End of Listing

Towers of Hanoi

Stephen Poole

One of the oldest games in the world is the so-called 'Towers of Hanoi' puzzle. Traditionally, you insert three vertical posts in the ground, and on the leftmost one you place three rings, the largest being at the bottom and the smallest at the top. The aim of the game is to move the rings one at a time, from post to post, to recreate the original order at the rightmost post. There is one limitation though: no larger ring may be placed on a smaller one!

I decided to try to see how easy the game was to program, (and even found a recursive solution printed in an old book!). But I really wanted a program with different levels of difficulty, and after some nasty false starts came up with the following listing. After much experimentation, it transpired that two levels of difficulty suffice, as the winning strategy is not

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really that difficult to discover, and this game lets you see your progress as it keeps a tally of your tries.

So I wrote a routine that will allow up to six posts and nine rings, but reduced this using select variables to either three or four posts, with either four, eight or nine rings. What's more, when the game begins it distributes the rings randomly on the posts, even having larger rings on smaller ones, the QL allowing itself to do precisely what you are forbidden from doing! Oh! Poetic Licence!!

You win when the rightmost post is correctly filled... To play, first touch a key for the difficulty-level. Then on the screen you will see three or four piles of disks (actually strings of letters, which happen to represent the 'weight' of each string). This system allows you to see at a glance the relative size of 'disks'. The ground under the stacks is underlined using strings of ~~~~~~ and below that again are the post-numbers.

To play, first touch the stack-number of the disk you wish to move, then that of the pile you wish to move it to. The QL will first error-trap your input if necessary, and then redraw the screen with the disks in their new positions. Remember, the aim of the game is to build a pyramid of rings on the right-most post. When you manage it, you will receive an accolade from the QL, and you will see if you are making any progress by following your number of moves.

This little game was inspired by a Sinclair ZX programming book, but I had to rewrite every aspect of it to get a useable program for the QL.

This game has a similar logic to some forms of 'patience' card-games given away with PC's. And like them it only monitors your efforts: It cannot play itself! Getting the QL to play would be an interesting exercise for young programmers. But such a listing would be too long to print in Quanta. Try varying the number of rings in the SElect s loop!

Happy shunting!

Best Wishes,

Steve Poole.

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<http://smsq.j-m-s.com>

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```
100 ::
110 REMark Hanoi_bas, by S;Poole, v12sept2006
120 REMark for Quanta
130 :
140 CLEAR: OPEN#1,con_16: WINDOW 512,256,0,0
150 PAPER 0: STRIP 0: INK 7: CLS: AT 1,1
160 PRINT'Difficulty Level (keys 1 to 3)?'
170 i$=INKEY$(#1,-1): IF i$="": GO TO 150
180 IF i$ INSTR '123' : ELSE GO TO 150
190 s=i$: SELEct s =1:c=3:q=4: =2:c=4:q=9: =3:c=3:q=8
200 :
210 q1=q+1: DIM t$(c,q1),n(q): try=0: ct=1
220 q$="": c$=FILL$('~',q): r$='123456789'(1 TO q)
230 FOR f=1 TO c
240   FOR j=1 TO q1: t$(f,j)='0'
250 END FOR f
260 :
270 REMark Set up a string of 9 random digits:
280 REPEAT loop
290   r=RND(1 TO q)
300   IF r$(r) THEN
310     q$=q$&r: r$(r)=0: ct=ct+1: IF ct=q1: EXIT loop
320   END IF
330 END REPEAT loop
340 :
350 REMark transfer each digit to random stack slots:
360 FOR j=1 TO q: t$(RND(1 TO c),j)=q$(j)
370 :
380 REMark Compress stacks by removing gaps:
390 REMark Work across heaps:
400 FOR i=1 TO c
410   REMark Then Up piles:
420   FOR j=1 TO q
430     REMark If cell empty:
440     IF t$(i,j)='0' THEN
450       REMark Work further Upwards:
460       FOR k=j+1 TO q+1
470         REMark compress down:
480         IF t$(i,k)<>'0' THEN
490           t$(i,j)=t$(i,k): t$(i,k)='0': EXIT k
500         END IF
510       END FOR k
520     END IF
```

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```
530     REMark Print the ring:
540     a$=t$(i,j): f$=CHR$(CODE('A')+a$-1)
550     AT 11-j,i*q1: PRINT FILL$(f$,a$)
560     END FOR j: t$(i,q1)='0'
570 END FOR i
580 :
590 REMark keep each stack's running-pointer tallies:
600 FOR i=1 TO c
610   FOR j=q TO 1 STEP -1: IF t$(i,j): n(i)=j: EXIT j
620 END FOR i
630 :
640 REMark Now draw the bases:
650 AT 11,0: FOR i=1 TO c: PRINT ;TO q1*i;c$;
660 AT 13,0: FOR i=1 TO c: PRINT ;TO q1*i;i;
670 :
680 REPEAT loop
690 AT 15,1: CLS 3: AT 15,1: CLS 3: BEEP 1234,5
700 AT 15,1: PRINT'Old tower number?!'
710 d$=INKEY$(#1,-1): IF d$="": NEXT loop
720 IF d$ INSTR '123456789'(1 TO q): ELSE NEXT loop
730 IF d$>0 AND d$<(c+1): ELSE NEXT loop
740 IF t$(d$,n(d$))='0': NEXT loop: ELSE PRINT!d$
750 :
760 AT 16,1: PRINT'New Tower number?'
770 v$=INKEY$(#1,-1): IF v$="": NEXT loop
780 IF v$ INSTR '123456789'(1 TO q): ELSE NEXT loop
790 IF v$>0 AND v$<(c+1): ELSE NEXT loop
800 IF t$(v$,n(v$)) THEN
810   IF t$(d$,n(d$)) > t$(v$,n(v$)): NEXT loop
820 END IF
830 :
840 REMark Now here's the main code:
850 d=d$: v=v$: n(v)=n(v)+1: a$=t$(d,n(d))
860 a$=t$(d,n(d)): f$=CHR$(CODE('A')+a$-1)
870 AT 11-n(d),d*q1: PRINT FILL$(' ',a$)
880 AT 11-n(v),v*q1: PRINT FILL$(f$,a$)
890 t$(v,n(v))=a$: t$(d,n(d))=0
900 IF n(d): n(d)=n(d)-1
910 :
920 try=try+1: AT 18,1: PRINT'Try:!'try
930 IF v$=c AND n(v)=q THEN
940   BEEP 12345,6: AT 19,1: PRINT 'Bravo!'"
950   i$=INKEY$(#1,250): EXIT loop
960 END IF
```

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970 END REPEAT loop

980 :

990 AT 19,1: PRINT'Another Game (y/n)?': i\$=INKEY\$(#1,-1)

1000 IF i\$='y': GO TO 100: ELSE WINDOW 256,206,256,0: STOP

1010 ::

End of Listing

QUANTA'S CHRISTMAS CHALLENGE John Gilpin

If you look carefully at Stephen's text for 18-hole Golf, you will see that he suggests that "Budding programmers could try including bias to simulate a cross-wind..... or plotting the trajectory precisely using the laws of physics."

Quanta's Christmas Challenge to its members is to adapt Stephen's code to include a random element of cross-wind AND to plot the precise trajectory of the ball for each shot taken using the basic physics formulae:

$$\begin{array}{l} \text{AND} \quad x=v \cos a^*t \\ \quad \quad y=v \sin a - \frac{1}{2}gt^2 \end{array}$$

Where v is the velocity in metres per second
 x is the horizontal distance
 y is the vertical distance
and t is the time in seconds.

All entries (preferably on 3.5 inch floppy disc or by email to secretary@quanta.org.uk) must be returned to Sarah Gilpin - Quanta Secretary by midnight on 28th February 2007. They will be judged by Stephen Poole, who's decision will be final and the winner will be announced at the AGM in April.

Thinking caps on and Happy Programming!!

John Gilpin.
Quanta Treasurer and Membership Secretary

Q-DIARY and ALARM by Dilwyn Jones

I've just put two new freeware programs of mine onto my web site.

Q-Diary is a personal diary program, which lets you schedule events for given dates and times in a similar way to a paper diary.

Events with a date, time and short message are entered into a diary database, with the program displaying daily diary pages via a calendar-style display. Click on the date of the page you wish to display. Facilities are included to display "imminent events" (e.g. a list of diary entries due within the next 15 minutes), and to set alarms to go off (with up to 8 optional warnings ahead of time) when the diary entry is due. Q-Diary has the facility to activate external alarm programs, allowing you to write your own programs to handle diary entries as they fall due.

Alarm is a program which may be used with Q-Diary or used independently. It can handle the alarms from Q-Diary, or it can let you enter a time and description of some event to happen today and when that time falls due it can either issue an alert message for that event, or even execute a program at that time. Up to 8 advance warnings can be set at periods from 2 minutes ahead up to 90 minutes ahead.

Both programs are pointer driven and require Window Manager 2 (i.e. SMSQ/E or QDOS with pointer environment version 2 or later).

Both programs are available from my web site, at:
www.dilwyn.uk6.net/utills/index.html



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SHELL V1.14

Shell version 1.14 is now available from the London QL and Quanta Group web page at -

<http://www.mcad.demon.co.uk/lquan.htm>

The Shell program was originally developed for QL by Adrian Ives. This version - now at v1.14 - has been enhanced and includes several bug fixes by David Gilham of the London Group.

What does the Shell do ? Well, it is a Unix like command line interpreter, giving direct access to program launching, QL pipes, etc.

It is almost the direct opposite of the graphical user interfaces for the QL, like QPAC2 and QDT, well worth having in your suite of QL software for the times that you may need to make use of it.

It is now compatible with the larger QL screens too, thanks to a new command.

Please direct any queries to David at the email address below:

Malcolm Cadman : ql@mcad.demon.co.uk

David Gilham - david@davidgilham.me.uk

Acknowledgement is made to ql-users list and to its contributors for the following news items:

QemuLator V2.4

Following last issue's announcement, in the middle of September, Daniele Terdina again wrote to ql-users list:

A new version of Q-emuLator for Windows is available. The main new feature is emulation of the Q60 video modes and some of the Aurora video modes.

RAM available to unregistered copies has also been increased to 384KB to allow users to run unzip_exe to expand archives of QL software downloaded from the Internet.

You can download Q-emuLator 2.4 from

<http://users.infoconex.com/~daniele/winql.html>

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And following a reported fault with Text 87 Plus 4 running (or rather NOT running) on a Q60, Dilwyn Jones sent us this article regarding a Patch which was written a couple of years ago as a reminder to those still experiencing difficulty.

TEXT 87 PLUS 4 PATCH

Dilwyn Jones

The original Text 87 Plus 4 is not able to run on the newer high colour displays on QPC2, Aurora, QXL, Q40 and Q60.

A little-known patch is available for the latest version of Text 87 Plus 4 English (E4) and German (g4) to allow it to run on the newer high colour displays on systems like QPC2 and QXL in 16-bit mode 32, Q40 and Q60 in 16-bit colour mode 33, and Aurora and QPC2 in 8-bit 256 colour mode mode 16. In other words, all GD2 systems.

The patch is in the form of a driver, which is added to the program to enable it to handle the new high colour displays.

Q-Branch advertise it for 9 pounds on page 32 of the current issue of QL Today, Jochen Merz also sells it for 12 Euros, although it's not listed in his adverts for some reason.

Jochen described the patch in more detail in the news pages in Volume 8 Issue 5 page 5 (Jan/Feb 2004 issue). In that item, Jochen described it as follows: "You do not need ot modify the result of using Text 87 plus 4 PATCH - just execute this instead of your original program."

It's also described (in less detail) on Marcel's website (in the GD2 page, where he discusses Window Manager themes etc).

In the description in QL Today, Jochen said it only works with the latest version of Text 87plus4 E4 (English - file size 116850 bytes) or G4 (German - file size 117354). The patch is apparently sold with the permission of Text 87 author Fred Toussi.

Early in October Dilwyn Jones reported to ql-user list:

BASIC REPORTER UPDATE

Version 2 of my Basic Reporter program is now available from my

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web site. This was the first QL program I sold through DJC! It is now about 16 years old and showing its age, so I've recompiled it with an up to date version of Turbo compiler, removed MODE calls, removed hard coded references to the system variables and linked all extensions required to the program, making it self contained. It now has a configuration block and a new command to allow its display to be moved around high resolution screens. While still a trial release, it does seem to work more reliably on SMSQ/E systems and under pointer environment.

Basic Reporter is freeware nowadays and can be downloaded from:

www.dilwyn.uk6.net/program/index.html

QPC2 V3.33

And ****HOT**** of the press - literally while I was putting this article together - Marcel Kilgus told ql-users list:

Finally the new QPC2 version is publicly available. The main change is the new emulation core, originating from George Gwilt, which is almost completely 68020 compatible. I've also spent much time on the core to enhance it and make sure it works as well as the last one, hope everybody is happy with the result.

Also I've uploaded a Spanish keyboard layout courtesy of Graham Wall.

The new release has the potential for a much improved boot time especially if you use QPAC2, but to fully exploit that you will need QPAC2 v1.45.

Also there is a new CTRL+C behaviour. The previous one was "pick the lowest window to top". But usually the lowest window is lowest for a reason, because you don't currently need it. The new behaviour first picks the second top-most, then the third top-most etc all the way down until you release the CTRL key, in which case the cycle starts again from the top. If that sounds too complicated, just play around with it, sometimes keeping CTRL pressed, sometimes releasing it between the CTRL+C presses and I think you'll get the idea. This feature can be disabled if required.

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Background I/O is now enabled by default.

Get it all at: <http://www.kilgus.net/qpc/>

QPC2 v3.33

3.33 New emulation core! All 68020+ addressing modes and common instructions supported! Many thanks to George Gwilt, who did the initial work, it wouldn't have happened without him.

Also thanks to François Van Emelen who once gave me a QXL card which was very useful for this development.

Fixed closing fullscreen QPC through system menu.

Implemented proper Numlock behaviour.

Fixed used/free disc space display on DOS drives.

Works around 2GB used/free space display limitation on Win95OSR2,98,ME.

SMSQ/E v3.13

3.13 One-line SElect no longer crashes on multiple expressions (MK).

Function()(x) no longer gives wrong char if x = last char index (MK).

If necessary, INPUT returns buffer overflow for compiled programs (MK).

Fixed swapped CTRL+SHIFT+Y and CTRL+SHIFT+Z on German keyboard (MK).

Fixed return value for sliced strings (MK).

Enable QPC numlock. Provide entry to set numlock for QPC (MK).

Shadow drawing bug (introduced in 3.10) fixed for Aurora (MK).

New system variable sys_xdly (delay after executing a job in 1/50s) (MK).

All inbuilt job executions respect sys_xdly (MK).

QPC initialises sys_xdly with 5 (MK).

New CTRL+C behaviour introduced, uses least-recently-used job order (MK).

New CTRL+C behaviour made configurable in QPC (MK).

Background I/O made configurable in QPC (MK).

Correct length set in home dir if simple device (wl).

New keywords YEAR%, MONTH%, DAY% and WEEKDAY% (MK).

QA.OP/QA.MOP load/store fixed for op-codes below \$80 (MK).

Working QXL keyboard LEDs (BC).

The North American QL Show was held on Saturday Sept 30th at the Super 8 Motel in Niagara Falls, Ontario, Canada. It was located in an area with lots of restaurants and motels and not far from the Falls. The temperature was comfortable and the skies mostly overcast. Most people had arrived by 7pm Friday evening and we all ate at a Korean restaurant right across the street from the motel. Al Boehm looked good and fully participated even though he was still wheel chair bound from a stroke he had last year. The motel had a small bar where we gathered and talked after dinner until the wee hours.

The next morning most of us ate at the Pancake House restaurant which was right next to the motel. At 10 am. we set up in the conference room generously paid for by QUANTA. Tony was busy trying to resurrect broken equipment the whole day. There were many notebooks set up with members sharing QL related information. Jim Hunkins gave a demonstration of QDT and got suggestions from the audience. Doug Laverne chaired an informal discussion about using the QL for email and web access. He received lots of suggestions about who to contact and what needs to be done. He plans to continue his effort to do this on a black box QL. A pizza lunch was provided from the remaining funds from NAQLUG (North American QL User Group - now inactive). Tony was still busy at 4 pm. when we had to leave the conference room. After the show some visitors had to leave but many were going out to dinner together Saturday night. Most visitors stayed on into Sunday and were going to do a bit more sight seeing around the Falls. All in all it was a fun show in a good location.

Almost as soon as the show closed, Tony Firshman notified the ql-users list:

Photos of the Niagara Falls show are on my website:

<http://www.firshman.co.uk/ql/photos.htm>

Where you can still see them - Sorry not a lot of room for photos in this issue of Quanta Magazine [Ed]

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<http://www.rwapsoftware.co.uk>

Sincere apologies to those of our members who were looking forward to the next instalment of "Genealogist and the QL" and the Assembly code listing for "Config Blocks in Turbo" which have been held over until the next issue due to shortage of space [Ed]

WHICH QL SYSTEM FOR ME?

Dilwyn Jones

With so many systems around now, it can be hard to decide which is the best QL system for you. Here's my take on this! It'll be nice to hear from other readers what their thoughts are on this, given that there's such a wide choice of QDOS and SMSQ/E systems available. [Replies to: editor@quanta.org.uk Ed.] Despite its age, the QL is still a good home computer system for those who just want to run their existing self written SuperBASIC programs and Quill, Archive, Abacus and so on. All of the QL compatibles and emulators let you use SuperBASIC programs. And there's an awful lot of free QL software available from PD libraries, the internet and of course Quanta's own software library.

TRADITIONAL QL SYSTEM

Most of us still have one of these, if only as a backup system or for nostalgic reasons. Although there is little by way of new hardware expansion being produced, there are plenty of second user interfaces and disk drives available. We all started off with traditional QL systems, so this type of system would be familiar and easy to get going for someone returning to the QL after a period of absence, for example. For run of the mill home computing, a QL with a Gold or Super Gold Card and a disk drive or two is quite adequate for those just wanting to type the occasional letter, keep a little database, use the occasional spreadsheet and play the occasional game. The downside would be the future - little by way of new hardware is produced and as existing disk drives wear out, it'll be harder and harder to get hold of suitable disk drives in the future as other types of computer systems move to newer technologies meaning that less and less QL compatible hardware will be available. Tony Firshman does a great job repairing QLs, so maintenance shouldn't be an issue. A traditional QL system with expanded memory and disk system needn't cost much these days and is quite a good choice for those who just want a simple to use home computer, or who just want to go back to the QL after a few years.

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THOR

Now very rare, the original Thor 1 was produced by CST in the mid 1980s. They were essentially a QL motherboard in a PC case with new keyboard, expanded memory and disk drives. There were various incarnations with various add-ons, culminating in the last computer, a 68000 based Thor XVI. Nice enough systems in their own right with good QL compatibility, their operating system was a CST in-house development of QDOS called Argos. There were other systems based on QL motherboards built into a PC style of case with various enhancements, but only produced in small numbers (e.g. the Sandy QXT-640 kit). So rare you are unlikely to get the chance to obtain one, sadly.

QXL

If you have an old PC lying around doing very little, a QXL card can make it into a pretty decent QL compatible system. Even if the PC is so old it's no good as a PC, provided it has an ISA card slot for the QXL, you get a machine which makes a decent and fast QL system. All the PC needs is some form of DOS on it (MSDOS or Freedos). The QXL runs as a fast QL system pretty independent of the speed of the PC. Make it boot up into QXL and you can almost forget it's a PC. Advantages are that such old PCs have no real other use, so you can probably get hold of one for next to nothing. QXL cards are available second hand from time to time, and SMSQ/E is available for QXL, including using high resolution and high colour displays. Disadvantages are probably that PCs of this age may prove difficult to repair if they go wrong and may only have a small capacity hard disk. QXL cards do pop up second hand from time to time (QBranch advertise ones occasionally). QXLs use SMSQ/E or the original SMSQ system (which is a sort of cut down SMSQ/E without pointer environment).

Q40/Q60

The Rolls Royce of QL hardware. An extremely fast system, which can use QDOS Classic or SMSQ/E. Still available, a system with plenty of memory and disk space and offers 16-bit colour with a suitable version of SMSQ/E. Slightly hampered by disagreements between its designer and SMSQ/E suppliers over whether the operating system should be open source or not (e.g. the designer has ported a TCP/IP system for internet connections but is unable to include it in the operating system because of licensing issues with the operating system, as SMSQ/E is a system you have to pay for even if you are paying more for support than the product

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itself). The major consideration for some will be cost (several hundred pounds - *[Or see our For Sale section at the back of this issue for a real bargain. Ed]*), but if you can afford it, it makes a really good QL compatible system, and you get the option of using its own Linux system on it too if Linux is of interest to you. A very good choice if you feel you can invest in the cost of this system to get the best QL possible!

AURORA

This is a QL compatible motherboard. It is not a complete QL system in itself, but it can use many QL peripherals like (Super) Gold Cards and behave like a real QL. Its design makes it fairly easy to build into a custom PC case if you would like a system based on familiar QL and Gold Card type technology, with expansion backplanes still available. It will drive many standard PC monitors (be a little careful of some flat screen LCD displays which can only handle some resolutions). The nice thing about an Aurora-based system (e.g. the Minis-QL which was produced in small numbers by Q-Branch) is that they are essentially a QL, but a bit easier to tinker with if you fancy building your own system into a PC tower case, for example. Like a QL, though, what you can do with it will ultimately be decided by the future availability (or lack of) of QL-compatible hardware.

EMULATORS

Emulators are programs which run on a given computer system, allowing that system to "pretend" to be a QL and to let you run QL software on it. Over the years, we've had emulators which run on Atari STs, Amigas, DOS, Windows, Linux and Apple Mac for example. Some are free, some are shareware and some are commercial. There's a good choice and most of them do a pretty good job, although some have limitations such as not being able to read QL disks directly. Trying out free emulators is a good introduction to them and emulators give a reasonable way of having two systems on one set of hardware if space in your house is at a premium. Compatibility can be an issue with emulators - not all programs will run on all emulators, but it is not as great an issue with QL emulators as it can be with emulators of other computer systems. Software emulator speeds generally depend on the speed of the host computer system, so a software emulator running on a very old and slow PC for example may not be fast enough for your needs. Modern computer systems generally allow QL emulators to run even faster than original QL systems.

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QLAY

There are versions of Jan Venema's emulator for DOS, Windows and Linux. It can run most QL software, but its disk handling leaves a bit to be desired. You have to use special software tools to transfer software into the QLAY environment rather than running software direct from floppy disk, which can take some getting used to. If you don't mind this too much, and you only want the emulator to run the occasional QL program QLAY is certainly a good bet because it's free. There's a QLAY 2 as well (from Jimmy Montesinos), I've only seen a PC version but it does have a few improvements over the original version.

QEMULATOR

Available in versions for the Apple Mac and Windows, Daniele Terdina's emulator is free for Apple Mac users or available as Shareware for Windows systems, where you get a cut down version which runs as a trial version then pay a registration fee of about 40 dollars to update it to the full, faster version with extra facilities. It uses copies of the QL ROM to run as a highly compatible QL system which in its fastest version running on a fast PC is MUCH faster than a traditional QL system, or you can select options to make it run exactly like an original QL or Gold Card QL. It can run SMSQ/E for the Gold Card if required, and the latest version can even emulate some Aurora and Q40 screen modes if you have the right version of SMSQ/E and want to tinker with high colour. Running QDOS, it has excellent compatibility with older QL software, although its drive handling system takes a bit of getting used to at first (up to 8 'microdrive' drive slots which can actually be floppy disks, PC hard disk directories or even QXL.WIN systems). If you pay for the full option, you get a system with built in TCP/IP system letting you run Jonathan Hudson's ports of Lynx browser, FTP and email programs.

UQLX

A good choice if you want to run QL software on your Linux box, Richard Zidlicky's uQLx QL emulator was originally based on the sources of the original QemuLator, a pretty tried and tested 68008 emulation. UQLx is also available in Windows and Mac versions although these are rarer. Not knowing the first thing about Linux, I won't really comment on uQLx other than to say it is a tried and tested free emulator with a pretty decent reputation. The Linux version has TCP/IP facilities included (not sure about the other versions).

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QDOS CLASSIC

Available for Amiga and Q40/Q60 systems, this is a traditional QDOS emulator which is very compatible with older QL software. QDOS Classic is free and although I have never used either version, it is highly regarded and a good option for those who are not bothered about SMSQ/E and want good QL compatibility.

ATARI ST

If you have an Atari ST you can either run the original software emulator QLEM or the hardware based SToQL system, (which is no longer in production and a bit rare now). QLEm is a rather basic QL emulation.

QPC

The most expensive of the emulators and the only one which is based on SMSQ/E. If you want to run modern QL software using high colours and all the latest bells and whistles, this is a good option to choose as it is a pretty seamless emulation with floppy disk, hard disk and ramdisk access which works just like a traditional QL system. Compatibility with older QL software is generally good, and it has facilities to start up with a traditional QL screen and memory layout for better compatibility with some programs. Being SMSQ/E based, it is not really the best choice if all you want is a close QL compatible just to run the occasional older QL program.

QDOS OR SMSQ/E

The original QL used the QDOS operating system. Since then, an updated QL operating system has been released and is still being updated - SMSQ/E.

The answer to this one is quite simple - do you want the latest bells and whistles - if so, choose SMSQ/E. If all you want is good compatibility with older software and just the ability to run basic programs you have written, go for QDOS.

OTHER CONSIDERATIONS

Do you need microdrives? If so, a traditional QL system is the only option. Microdrive cartridges are not manufactured nowadays, but there are plenty of them available second hand and most of us still have some old programs on cartridge.

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Do you need the QL network? If so, you need to go for a QL, a QXL or an Aurora, since those are the only systems with the QL network sockets on them allowing simple 2-wire networks of several machines to be interconnected. There is another networking system called SERNET available which uses connections between the serial ports to make a (usually slow) interconnection available. Easy enough to use for a 2 machine connection, but rather complex cabling needed for 3 or more machines.

Do you need to use existing old hardware you have available? If so, a QL or Aurora are the only practical options.

CONCLUSIONS

I hope this article will help you decide what kind of system is best suited to your needs. It's a pretty difficult choice as the various types of systems all have their own strengths and weaknesses. As a generalised reply I'd suggest the following:

- If returning to the QL after a period of absence or just using the QL as a simple home computer to run a few useful programs, a traditional QL or ready built Aurora system is probably the best choice. Although little by way of new hardware is produced, there are plenty of disk systems and so on available on the second hand market.
- Want the best dedicated QL system money can buy? Then a Q60 is probably the best choice
- Want to make use of an old PC which is well past its sell-by date? Consider adding a QXL card to give it a new lease of life as a useful fast QL system.
- Want to be able to run QL software on a PC, Mac or Linux box? Consider an emulator, which can let you have the best of both worlds. Consider carefully if you need the latest facilities of whether the free or shareware emulators would suit your needs. Do you need QDOS or SMSQ/E? QemuLator for Windows can run either operating system, QPC2 is probably the best money can buy, although it's the most expensive emulator, and emulators like QLay and uQLx are free for those who just want a simple system to run the occasional QL program.

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FEEDBACK

It occurred to me while writing this that so much depends on your perspective on these things. I'm a QPC2 user, which gave me the best of both worlds (Windows and SMSQ/E), which happens to suit my needs for a cost-effective dual platform system with just one set of hardware. Some will need a good QL system with no requirements for anything else, in which case a Q60 will do nicely if they can afford it. So much depends on your requirements.

More than 20 years after the QL itself was last manufactured, I'd really like it if readers would write in and give their own perspective on all this and share experiences of the various types of systems available to us.

SMSQ/E VERSIONS

Dilwyn Jones

First, there was QDOS. And the great deity Tebby saw that although it was good, he could do even better, so SMS and SMSQ were developed.

Originally, there was SMS2, a cartridge for Atari ST systems. This was a forerunner of the SMSQ/E we know and love today.

Then came SMSQ on the QXL, which was a sort of cut down early SMSQ/E without pointer environment, for the QXL card from Miracle Systems.

Tony Tebby then gave us SMSQ/E which is still being developed today. These days, the main driving forces behind SMSQ/E are Marcel Kilgus (author of the QPC2 emulator) and Wolfgang Lernerz, who is the SMSQ/E Registrar. Wolfgang tries to collate the updated versions and keep the various versions of SMSQ/E aligned for the various systems on which SMSQ/E is used. The source code files for SMSQ/E are available from Wolfgang's website, so those interested in the development of the operating system can look at the code which makes up SMSQ/E and contribute new code if need be.

WHAT IS SMSQ/E?

SMSQ/E is an Operating System for QL compatible platforms. The original QL had the QDOS operating system. After Sinclair's QDOS ROMs we had Minerva, which was still essentially QDOS, but in an improved

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version which fixed some problems people had found with the earlier Sinclair QL ROMs.

SMSQ/E stands for Single-user Multi-tasking System for QL/Extended (the Extended referring to the fact that the Extended Environment of pointer environment and window manager and hotkey system are all built in).

By 'QL compatible platforms' we basically mean any system which can run QDOS or SMSQ/E. In other words, something which can run QL software. By this we can mean a good old black box QL, an Aurora, a QXL card, An Atari ST with ST-QL card, a Q40 or Q60 computer or even an emulator like QemuLator or QPC2. There have been one or two attempts at other QL-compatible systems over the years, such as the Thor computers and Mike Lilley's QL-compatible motherboard which were short lived and certainly not around in great numbers. I don't know if machines like the Thor, despite being based on QL circuit boards, could run a modern version of SMSQ/E unless SMSQ/E was specifically modified for those machines.

THE DIFFERENT VERSIONS

So as it stands we have a few different versions of SMSQ/E for the different platforms, as follows:

- QL with Gold Card or Super Gold Card
- Aurora with (Super) Gold Card - basically the same as the QL version but with different video drivers for the 8-bit 256 colour mode of the Aurora.
- QXL card
- Atari ST-QL
- Q40 and Q60
- QPC2

The differences between the six different versions basically lie in the computer systems on which they run. QPC2 is a software-based emulator which runs on a PC system. The ST-QL emulator card is a card which

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plugs into an Atari ST computer. The QXL is a hardware card which plugs into a PC and uses the PC disk drives, screen, and so on. The Q40 and Q60 computers are advanced QL systems, but with some (distant) similarities to PCs in terms of their hardware. The most obvious difference is in the field of graphics. Most of these systems can work with a variety of screen resolutions and colour modes, while their graphics hardware is most likely very, very different from machine to machine.

When you consider the differences between these computers, it becomes hard to envisage that you can build an operating system which is the same for all of them, but able to handle the different screens, the different disk drives, the different printer ports and so on. All the more credit to the operating system designers who created it in such a way that it was capable of having small or significant differences from version to version to handle the different hardware and capabilities of the systems on which it's to be installed.

A Q60 and a QXL both have 16-bit colour modes. But look a little closer and you realise that the inner workings are very different. You cannot even save such a screen picture from a Q60 and reload it into a QXL and expect it to look the same, because the inner workings are different. Which makes it all the more remarkable that the same operating system is capable of working on such different machines.

The secret of course is that the operating system is the same as far as your programs are concerned. The program says what it wants to do (e.g. print some text to the screen) and the operating system works out how to do it for the machine it's running on. Different hardware needs different driver software and this accounts for a large part of the differences between versions - the driver software. The QL and Aurora versions of SMSQ/E are very similar, but have different graphics drivers because the screen hardware and layout in memory (how the screen is driven) are rather different from machine to machine. The QL only has 512x256 mode 4 and a mode 8 screen. The Aurora can vary the number of pixels on the screen (resolution) and has a couple of modes with more colours than a QL, e.g. the 256 colour mode. This is achieved by supplying SMSQ/E with a different set of graphics drivers for the Aurora. SMSQ/E is a modular operating system - it allows "modules" to be bolted on as required, depending on what system it's expected to run on.

SMSQ/E Aurora version was developed by Marcel Kilgus, who wrote QPC2. In fact, the approach which Marcel took initially was to develop a screen mode for QPC2 which was just like the 256-colour display of the Aurora. It's called Mode 16 and is the same on both systems, but QPC2

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needs to drive the display on a PC, whereas the Aurora version of SMSQ/E needs to achieve the same display on a completely different machine, an Aurora card.

COMPLICATIONS

So we have different versions for completely different machines. Understandable, but not too difficult a concept to grasp.

But something happened recently which has blurred the lines a little. Life is never simple!

Daniele Terdina is the author of a QL emulator running on Windows, called QemuLator. The original version of this used QDOS, by running a copy of a QL ROM, or a copy of the Minerva ROM. Then Daniele gave it the ability to run a copy of the Gold Card version of SMSQ/E. The most recent version has taken this a step further, by allowing the emulator display to pretend to be an Aurora or even a Q60. Somehow, the emulator is able to switch to a 256 colour 8-bit graphics display (Mode 16) like an Aurora. In this case, it can run the Aurora version of SMSQ/E. Alternatively, it can set up a display like that of the 16-bit colour Q60 screen, in which case it needs the Q60 version of SMSQ/E to handle the type of display you've set it up to use! So, here is a more complicated scenario where one system can use any of three versions of SMSQ/E!

This would be of great use to QL software writers, because one copy of QemuLator could be used to test if the same program can run on Aurora, a QDOS system, a Q60 and so on without having to have a separate QL system, Aurora system and a Q60 all in the same room!

So now we have several versions of SMSQ/E all needing to be able to handle mode 16 in 256 colours, but running on three completely different systems (Aurora, QPC2 and QemuLator!). Complications, complications.

Where things become even more complicated is when the underlying operating system is itself emulated. Just imagine you have an Apple Mac system. There are programs (or emulators) for Apple Macs which can run software written for Windows. This is called a Windows Emulator for Apple Macs. Some people take this a stage further and run a QL emulator on this Apple Mac under the Windows emulator - several layers of emulation, imagine the QL emulator in turn running a copy of PC Conqueror DOS emulation or running a Spectrum emulator! Modern computer hardware has become so powerful that an emulator running on another emulator is

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fast enough to be viable.

Things are getting so complicated, I'll leave it at that and fetch my good old black box QL out of the attic.

SMSQ/E for most systems is available from your local software dealers like Jochen Merz Software and Q-Branch. Q60 SMSQ/E is available from Q60 distributor D&D Systems. The Aurora version of SMSQ/E is currently available direct from Marcel Kilgus, who developed that version.

Wolfgang Lenerz's SMSQ/E Registrar pages may be found at:

<http://www.scp-paulet-lenerz.com/smsqe/>

ROBOTICS On The QL

David Buckley

Following a brief introduction to and demonstration of his Robots at the AGM in Manchester, David has written this article which once again demonstrates the versatility of the QL [Ed]

My involvement with computer controlled robots first started when I built Quester a micro-mouse using an Acorn System-1 6502 based dual eurocard microcontroller with a hex keypad, LED display and tape interface. Writing routines in 6502 code proved quite easy after I realised that the monitor listing in the manual was wrong and disassembled the actual monitor in the ROMs! I don't think Acorn documentation ever improved. Soon after I moved on to a ZX-81 and then a 16k Spectrum and then a 48k Spectrum. But this article is about robotics on the QL.

In the early 80s Robin Bradbeer, who had started this country's first computer club at the (then) Poly of North London, and myself were talking in his kitchen when he said "we ought to start a robot company". I had already designed Zeaker, a desktop mobile robot, which was being sold by Colne Robotics alongside their Armdroid robot arm and Colvis vision system. So since it seemed everybody then (and now!) expected robots to be the next big thing we recruited a few more people and founded Inter Galactic Robots (IGR). Robin did always like to think big and since we couldn't call ourselves International without actually being international, InterGalactic it was, as he said "let them try and prove otherwise".

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Zeaker was designed to run from a ZX-81 and was first and foremost a mobile robot with six bump sensors, two user LEDs, a user horn and most importantly a pen which could be raised and lowered under program control. This allowed Zeaker to draw simple graphics after the style of the MIT (Massachusetts Institute of Technology) LOGO Turtles.

I decided that IGR's first product should be a mobile robot capable of executing LOGO style graphics which meant it must be positionally accurate and have a pen. The outcome of some intense design work was Zero2. Originally named Zeaker-II, Robin wishing to avoid the problem of an innocuous name when translated to some foreign language meaning 'your mother is a pig', or some such, decided that Zero universally meant zero and so the robot became Zero2.

Zero2 had two wheels each driven by a stepper motor; a sliding toe to prevent it tipping over; a stepper motor controlled pen which could be raised and lowered; two user LEDs; three infra-red photosensors and two infra-red LEDs grouped to use as a line sensor for white or black lines; and an expansion bus. Power and control signals reached Zero2 over an Umbilical and the control signals were RS232 at 4800 baud allowing Zero2 to be run from all the main personal computers on sale at the time.

Richard Moyle wrote ZeroDrive, a Z80 machine code program which allowed full control of Zero2 using high level calls and which could be hooked into Sinclair LOGO on the Spectrum + Interface-1, or used directly from Basic on other Z80 based computers.

ZeroDrive was a very nice piece of code but it was only an interface, to get Zero2 to do something you still had to write high level commands in another language. I wrote a Sinclair-LOGO program to allow Zero2 to move three pallets in a Towers of Hanoi fashion but found that editing a list was not something which was native to Sinclair-LOGO. There had to be a better way. There was, I had a QL.

The result was a 54k Superbasic program which consisted mainly of functions and procedures invoked directly by the user from the command line. Lists of commands can be remembered and replayed forwards or backwards, saved to long term memory, included by name in other lists, learning can be turned on or off and all the robot moves can be drawn on the QL screen. Not only that, but because the program only runs insofar as a procedure or function is executed it can be edited without really quitting anything and moves in short-term memory are retained.

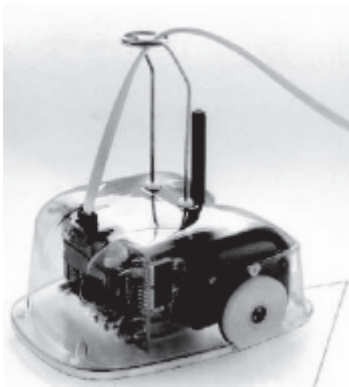
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Sadly after writing the QL program IGR was forced into liquidation by the teachers strike of 1986 since schools were no longer buying Zero2s.

Recently someone inquired about the workings of Zero2 which prompted me to go through my old papers and the screen shots are the result of running the program under QPCII. There should be no reason to prevent Zero2 working from QPCII but at the moment having lent out my serial-port-to-umbilical interface I can't even run a Zero2 from a QL.

Maybe after this I will go back to the program and add the code so that Zero2 will search for and follow a line and draw it. Also one thing which never got designed was the infra-red obstacle sensors. With them, or even simple contact switch sensors, the program could build and interpret maps and plan routes which was what prompted it all those years ago.

Next issue, David will discuss Controlling a Robotic Vehicle [Ed]



David's Zero2 Robot
And some screen shots
showing parts of the
Control Programme

```
Zero2 Control Programme
write 'help' for onwards

Display Commands
help  stop  zing  drawit  map  stop
longel  readr  relearn  ulbrun  replay  relap
bplax
plist  relear  rfile  rprog  quit
rlist  relear  relear  rprog  quit

Robot Commands
T143  =  fcode  hons  upwind  avert  buzz
      =  ic  xlr  sb  v
0037  =  F3  n  R0  r  ST  v  n
T04  =  pa  pd  [drawit]
L12478  =  l  n  pl  n  v  v  f  sh  v  rll
0093  =  h  n  n  pl  r  r  v  v  h  st

SPACE-BAR to return, ENTER for home...
```

```
Zero2 Control Programme
write 'help' for onwards

Display Commands
help  -  display help screen
stop  -  recover from a crash, if possible
z.in.1  -  initial call to set up serial channel
pl.rlist  -  select path for file to plot
l.in  -  initial call up of display routine
draw  -  draw map, robot, display routine
target  -  towards in short hand select, one entered
learn  -  towards associated and learned
relearn  -  towards associated and not learned
ulbrun  -  towards is associated in relearn and longterm
map.pl  -  learned commands are associated in program
relap  -  learned commands are one of a list
bplax  -  learned commands are executed in reverse order

SPACE-BAR to return, ENTER for home...
```

```
MS-2.5 CONTROL PROGRAM
ENTER HELP FOR COMMANDS

rlset - list commands in short term memory
rlsetr - alter routine in short term memory
rlis - and altering of short term memory
rmove - move or learned routine to long term memory
rlist - list or learned routine
rmove - list names of routines in long term memory
rmovec - evacuate a routine from long term memory
rget - get commands from a routine in long term memory
quit - quit program, loading and closing memory files on edit.
```

SPACE-BAR to return, ENTER for more...

```
MS-2.5 CONTROL PROGRAM
ENTER HELP FOR COMMANDS

Robot Commands - Find
hmove - set present position to be the home position
hset - go to home position but don't unlock
smove - move until just until heading is 0 deg.
qlist - order computer to sound "alarm"
bzset - order computer to sound "buzz"
jc - change to joystick control
rl n - set for 'n' 00 hrs of a second
sl n - send byte 'n' to robot, direct control
```

SPACE-BAR to return, ENTER for more...


```
MS-2.5 CONTROL PROGRAM
ENTER HELP FOR COMMANDS

Robot Commands - Body
rl n = forward 'n' 0l n = back 'n' all 1aall n
rl n = left turn 'n' rl n = right turn 'n' scapress
0e = pin up 0e = pin down
ll n = left light hl n = horn high tone of logical
rl n = right light hl n = horn low tone of logical
la n = lights state ha n = horn state sbit control
2rl, left light /high tone ; 2rl, right light /low tone
logical horn 0b000
flsh n = flash lights 'n' times
root n = cycle horn 'n' times
flnt n = flash lights, and cycle horn 'n' times
```

SPACE-BAR to return

```
MS-2.5 CONTROL PROGRAM
ENTER HELP FOR COMMANDS

Robot heading = 0 deg. set up sep height = 3000
rl 3 400
rl 3 400
rl 45
rl 400
rl 355
rl 400
home
home
rl 400
rl 400
rl 400
rl 400
```



SAVEing in SBASIC

Dilwyn Jones

Here's a handy little time saver for users of recent versions of SMSQ/E.

When writing programs in SBASIC, we tend to make a change, save a copy and run it to test, several times over. This involves repeated typing of the filename if you save often.

SBASIC has a great little typing saver - after you've saved the first time, just enter the command SAVE without a filename, it will remember the last filename used.

So, the first time you save a program, e.g. with SAVE WIN1_TEST_BAS, then on subsequent saves in the same session just type in SAVE.

QSAVE will work in the same way, and seems to adapt filename extensions automatically. So, after you've done SAVE WIN1_TEST_BAS, a QSAVE will save a file called WIN1_TEST_SAV.

SUBGROUP MEETINGS

THE WEST MIDLANDS QL USER GROUP

This long-running group has moved back to its previous venue, the Queens Head pub in the City Centre. Meetings remain open to Quanta members and non-members alike. The Queens Head is in Steelhouse Lane, Central Birmingham, four minutes walk from Snow Hill main-line railway station and has ample street parking nearby.

Meetings are usually on the first and third Monday of each month (but not on Bank holidays unless the previous one was cancelled for that reason). After your first meeting you're expected to pay £1 each time towards the organisation and monthly newsletter costs - except once a year when the group pays all those who attend a pound instead (We provide food twice a year for those who attend the AGM and the group's birthday party) and at meetings we discuss all sorts of things, QL-related and otherwise, usually from about 8:20pm onwards till 10:30 or later. The group owns QL hardware, a disk library and subscribes to relevant magazines. People can join the mailing list for £3.50 per year, even if they can't attend regularly.

The contact number remains Mike Bedford White's, on 0121 708 2560, anytime after 11 am.

QUANTA DORSET SUBGROUP

Meetings are held, on the second Sunday of each month at the Merley Community Centre in Harrier Drive, Merley, just south of Wimborne Minster. Time: 2.00pm to 5.00pm. All are welcome.

John Meadows Tel: 01202 576189, or John Mason, 01425 275894.

LONDON QL AND QUANTA GROUP

Meetings are held in the School Room, which is the basement of the Borough Welsh Congregational Chapel, 90, Southwark Bridge Road, London SE1. This is almost opposite the junction with Marshalsea Road, at the other end of which, 5 minutes walk away,

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is the Borough Underground Station. Free parking is easily available in Southwark Bridge Road for road users, Cyclists are welcome.

Members currently each pay a subscription of £30 per year towards the cost of the hire of the hall and a small additional charge is made for tea/coffee - biscuits are then provided free.

Please bring your QL equipment if possible, all types welcome, e.g., PC portable running emulators. The Group has some systems stored at the venue for its use. In addition, there are lots of donated second user equipment, books, magazines, etc, available for purchase.

Time : 2.00 pm to 6.00 pm, on the second Sunday of the month.

No meetings are held in either December - winter break, or August - summer break. Giving 10 meetings a year.

Malcolm Cadman : Tel: 020 8691 5780; email: QL@mcad.demon.co.uk

NEMQLUG - THE NORTH EAST MANCHESTER QL USER GROUP

Meetings are held at 181, Urmston Lane, Stretford, Manchester. M32 9EH (Near Junction 7 of M60 Motorway - Was Junction 7 M63 Motorway).

Our informal meetings start at 7 p.m. and finish at 11 p.m. All welcome.

Meets on the last Thursday of each month (except December).

John/Sarah Gilpin 0161-865 2872 (thegilpins@btopenworld.com)
or John/Alison Southern 01625-850067. (tarragon@bigfoot.com)

SCOTTISH QL USERS GROUP

SQLUG meets at George Gwilt's home every second Sunday in the month. Please contact George Gwilt before coming to get the location.

Geogwilt@aol.com

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SOLENT SUBGROUP

Meets at Botley Market Hall, all welcome. Park at the back and use side entrance.

1st Saturday of the month from 2.00 pm to 6.00 pm.

Graham Evans, Tel: 023 8040 3350.

SURREY QUANTA SUBGROUP (SQSG)

Venue is St Giles Church Hall, Ashted. (This is the other side, towards the downs, of the main Epsom - Leatherhead road, up Park Lane which is at the Epsom end of the town).

From 8.00 to 10.30 pm on the last Wednesday of each month, except December.

Ken Bain 01932 347 432 (to midnight), kenb@bcs.org.uk

SUSSEX QL USER GROUP

Currently without a meeting place, anyone interested should contact Keith Mitchell or Roy Wood.

Roy Wood, 01273 386030 or Keith Mitchell, 01903 742263.

LIBRARY CORNER

John Gilpin

The author of the Proprint Programmes has made a new version available. If you want a copy ask the librarian for Disk PF06.

Dilwyn Jones has sent us a DVD of Wallpaper images suitable for all systems. At this moment in time, Quanta are unable to copy DVDs but this collection is also available on a set of 6 Cds. Enquiries to:

librarian@quanta.org.uk

FOR SALE (Again)

Further limited stocks of QL Microdrives have become available and these are offered on a first come first served basis

2 (Two only) "Transform" Plastic Boxes each containing 25 re-formatted QL Microdrives

£1.00 each box + £1.25 each P. & Pkg.

60+"Sinclair" Plastic Wallet each containing 4 re-formatted QL Microdrives

£0.25 each + £0.50 each P & Pkg.

All enquiries to John Gilpin QUANTA Treasurer.

SMALL Ads BARGAIN OF THE MONTH

Q60 computer with 128 Mb RAM, 20 Gb HD, CD & FD drives, 2 PAR, 4 SER, mouse and keyboard.

SMSQ, Linux and software package installed.

Cost £669; Best Offer secures, but buyer who can collect from London area preferred

Email: david_mccann@tiscali.co.uk, Phone 0208-994 8103.

WANTED:

Di-Ren Micro Process Controller

Contact: John Gregory, email jmelgregory@tiscali.co.uk

Phone: 01763 260120

WANTED:

External Disk Drive Units for use with QL disk interfaces. Single and dual units wanted.

NOTE: The drives care not essential. Casings and Power Supplies required

Contact Rich Mellor of RWAP SERVICES - see Ad on page 18.

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